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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/892,860	06/28/2001	Deonarine Phagoo	4320-292	3126

7590

10/21/2003

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EXAMINER

FORTUNA, ANA M

ART UNIT

PAPER NUMBER

1723

DATE MAILED: 10/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/892,860

Applicant(s)

PHAGOO ET AL.

Examiner

Ana M Fortuna

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-- Th MAILING DATE of this communication appears on th cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5/29/02.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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Claim Rejections - 35 USC § 112

1. Claims 3-8, 23, 24, 25, 27 are under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 3-4 are redundant, its limitations are included in the amended claim 1. Claim 4 is unclear as to what is intended, since screening and recycling back to the wastewater treatment system is claimed in claim 1. In claim 5 the term "flowed back to the recycled mixed liquor stream" is not clear, since screening and recycling back to the process is claimed in claim 1, recycling back the screened liquors to the to the mixed liquor contradicts the limitation of claim 1, which recycles the screened liquor to the initial process. Claims 7 and 8 are unclear as to whether the mixed liquor and the sludge constitute the same streams in the process (e.g. stream 26 of the figure or retentate from the membrane). Claims 23-27 include the limitations of claims 4-8 discussed above, and are therefore also unclear.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-9, 11-15, 21-28, 30-34, 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (5,575,213). This rejection is discussed on paper

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No.6, and is still considered proper for reasons that will be discussed in section "response to arguments", bellow.

4. Claims 16-17, 20, 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller in view of Fox. This rejection has also been discussed in paper no. 6, and now maintained, based on applicant's amendment.

5. Claims 10, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al as applied to claims 1-9, 11-19 above, and further in view of Coyne). The combination of references has been discussed in paper no. 6, and still considered proper.

Response to Arguments

6. Applicant's arguments filed 6/10/03 have been fully considered but they are not persuasive. Although Miller et al does not show a figure of their embodiments, Miller et al teaches the source of water and the different treatments, including "recirculation of concentrate" from the dynamic membrane treatment to back to the process, which suggests returning the concentrate to feed inlet of the process, and therefore includes screening of the concentrated re-entering the process (column 8, lines 47-64). Directing concentrate to a holding tank for further discharge is also suggested as an alternative in the process of Miller et al. Mixing sludge from the screening process with the retentate discharge is not disclosed, however discharging separated solids from the screening process is disclosed. It would have been obvious to mix both strings for discharge, or disposed both strings separated, since Miller et al teaches discharging, both final concentrates, e.g. from the screen and from the concentrate tank (column 5, lines 64-

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65, column 6, line 1, column 11, lines 28-37). Applicant's argues that the screen filter in Miller is located in the feed stream, and in the present invention the screen is located in the mixed liquor stream. By recirculating the mixed liquor back to the feed inlet, the mixed liquor stream will also be screened, the effect of screening the concentrate prior to the membrane filtration, is intended for the same purpose of removing concentrated solids in the mixed liquor stream, which avoids membrane clogging, as it does in the prefiltration of the feed waste stream, therefore, one skilled in the ordinary art it would have been motivated to treat the concentrate (mixed liquor) before the membrane treatment for the same purpose. Furthermore, treatment of concentrate before recirculation back to a membrane process to remove solids and avoid membrane clogging is conventional in the art, e.g. by precipitation, microfiltration, or screen, and is disclosed in the prior art of record. The rejection based on the combination of Miller and Coyne is also maintained, Coyne teach treatment of the water source or water containing hair (column 3, line 2), combination of rotation screen, e.g. rotating drum upstream of a filter membrane (RO); treatment with hollow fibers, and flocculation by acrylamide polymer as pretreatment is also disclosed. Adjusting filtration operation to achieve a predetermined flow rate is within the knowledge of the skilled artisan. The rejection over '445 have been withdrawn. The Claims have been better classified within the 103 rejections as necessitated by amendment to the claims.

Applicant argues that the term "mixed liquor is well known as a mixture of raw wastewater and activated sludge, however, producing an activated sludge, e.g. in a bioreactor or combination of bioreactor and anaerobic treatment or anaerobic treatment

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is not present in the process or apparatus involved in the process of the present inventions. The process have been considered as including treatment of the particular waste water in a system having a membrane and a screen for filtering the concentrate prior to recirculation back to the system.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References 5,501,798, 3,839,206, 4,992,641, 5,403,490, 6,383,378 have been added as teaching the use of filtration to remove coarse solids from a retentate stream in waste water treatment process, prior to recirculation to the

feed stream, and recirculation to a feed stream including a prefilter before the membrane filtration.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana M Fortuna whose telephone number is (703) 308-3857. The examiner can normally be reached on 9:30-6:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on (703) 308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Ana M Fortuna
Primary Examiner
Art Unit 1723

AMF